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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/720,898	11/21/2003	Jack C. Wybenga	2003.07.005.BN0	5311

23990 7590 11/23/2007

DOCKET CLERK
P.O. DRAWER 800889
DALLAS, TX 75380

EXAMINER	
BOKHARI, SYED M	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
11/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/720,898	WYBENGA ET AL.	
	Examiner	Art Unit	
	Syed Bokhari	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-9,11-17 and 19-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1, 3-9, 11-17 and 19-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's amendment filed on August 27th, 2007 has been entered. Claims 1, 9 and 17 have been amended. Claims 2, 10 and 18 have been cancelled. Claims 22-24 have been added. Claims 1, 3-9, 11-17 and 19-24 are still pending in this application, with claims 1, 9 and 17 being independent.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 1, 9, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Civanlar et al. (USP 6,078,963) in view of Kumar et al. (US 2004/0156371 A1).

Civanlar et al. discloses a communication system for all of the ports in a router independently perform routing and forwarding functions with the following features: regarding claim 1, for use in a telecommunication network, a router (100) comprising a switch fabric (102) (Fig. 1, a router 100, see "switch fabric 102 connected to router" recited in column 2 lines 41-44); N Layer 2 modules coupled by the switch fabric (Fig. 1, a router 100, see "switch fabric 102" recited in column 3 lines 5-10), wherein a first one of the Layer 2 modules comprises a Layer 3 routing engine (107) capable of forwarding a first received data packet through the switch fabric directly to a second one of the Layer 2 modules using a Layer 3 address associated with the first received data packet if the first Layer 2 module does not recognize a Layer 2 address associated with the first received data packet (Fig. 1, a router 100 and switch fabric 102, see "processing routing data by forwarding engine 105" recited in column 3 lines 28-47) and wherein the Layer 3 routing engine comprises a forwarding table comprising a plurality of aggregated Layer 3 addresses (Fig. 1, router with intelligent ports, see "generates its own routing table" recited in column 3 lies 28-33); and regarding claim 3, further comprising R route processing modules coupled to the switch fabric (Fig. 1, a router 100, see "switch fabric 102 connected to router" recited in column 2 lines 41-44), wherein the first Layer 2 module transmits the first received data packet to a first one of the R route processing modules (Fig. 4, intelligent router port 103, see "routing data forwarded back to.external interface step 425" recited in column 8 lines 23-30) and if the Layer 3 routing engine determines that the forwarding table does not contain the Layer 3 address associated with the first received data packet (Fig. 4, intelligent router port 103, see "when address

does not exist step 420" recited in column 8 lines 9-15); regarding claim 4, wherein the switch fabric transmits the first received data packet to the first route processing module (Fig. 1, a router 100, see "switch fabric 102" recited in column 3 lines 5-10) and by selecting the first route processing module using a load distribution algorithm (Fig. 1, a router 100, see "switch fabric 102 maintains distributed control" recited in column 3 lines 16-22); regarding claim 6, wherein the Layer 2 frames are Ethernet frames (Fig. 3, intelligent routing port 103, see "data link layer processing" recited in column 7 lines 48-50); regarding claim 7, wherein the Layer 3 data packets are Internet protocol (IP) data packets (Fig. 1, a router 100, see ""internet protocol (IP) packet address" recited in column 3 lines 55-65); regarding claim 8, wherein the switch fabric is a Layer 2 switch (Fig. 1, a router 100, see "layer-2 switch fabric 102" recited in column 4 lines 11-28); regarding claim 9, A telecommunication network comprising a plurality of routers, each of the routers comprising a switch fabric (Fig. 1, a router 100, see "switch fabric 102 connected to router" recited in column 2 lines 41-44), N Layer 2 modules coupled by the switch fabric (Fig. 1, a router 100, see "switch fabric 102" recited in column 3 lines 5-10), wherein a first one of the Layer 2 modules comprises a Layer 3 routing engine for forwarding a first received data packet through the switch fabric directly to a second one of the Layer 2 modules using a Layer 3 address associated with the first received data packet if the first Layer 2 module does not recognize a Layer 2 address associated with the first received data packet (Fig. 1, a router 100 and switch fabric 102, see "processing routing data by forwarding engine 105" recited in column 3 lines 28-47) and wherein the Laver 3 routing engine comprises a forwarding table comprising a plurality

of aggregated Layer 3 addresses (Fig. 1, router with intelligent ports, see "generates its own routing table" recited in column 3 lies 28-33); regarding claim 11, wherein the each router further comprises R route processing modules coupled to the switch fabric (Fig. 1, a router 100, see "switch fabric 102 connected to router" recited in column 2 lines 41-44), wherein the first Layer 2 module transmits the first received data packet to a first one of the R route processing modules (Fig. 4, intelligent router port 103, see "routing data forwarded back to external interface step 425" recited in column 8 lines 23-30) and if the Layer 3 routing engine determines that the forwarding table does not contain the Layer 3 address associated with the first received data packet (Fig. 4, intelligent router port 103, see "when address does not exist step 420" recited in column 8 lines 9-15); regarding claim 12, wherein the switch fabric transmits the first received data packet to the first route processing module (Fig. 1, a router 100, see "switch fabric 102" recited in column 3 lines 5-10) and by selecting the first route processing module using a load distribution algorithm (Fig. 1, a router 100, see "switch fabric 102 maintains distributed control" recited in column 3 lines 16-22); regarding claim 14, wherein the Layer 2 frames are Ethernet frames (Fig. 3, intelligent routing port 103, see "data link layer processing" recited in column 7 lines 48-50); regarding claim 15, wherein the Layer 3 data packets are Internet protocol (IP) data packets (Fig. 1, a router 100, see "internet protocol (IP) packet address" recited in column 3 lines 55-65); regarding claim 16, wherein the switch fabric is a Layer 2 switch (Fig. 1, a router 100, see "layer-2 switch fabric 102" recited in column 4 lines 11-28); regarding claim 17, a switch fabric (Fig. 1, a router 100, see "switch fabric 102 connected to router" recited in column 2 lines 41-44), N Layer 2

modules coupled by the switch fabric (Fig. 1, a router 100, see "switch fabric 102" recited in column 3 lines 5-10), if the first Layer 2 module does not recognize the Layer 2 address associated with the first received data packet, using a Layer 3 routing engine associated with the first Layer 2 module to forward the first received data packet through the switch fabric directly to a second one of the Layer 2 modules (Fig. 1, a router 100 and switch fabric 102, see "processing routing data by forwarding engine 105" recited in column 3 lines 28-47)) and wherein the Layer 3 routing engine uses a Layer 3 address associated with the first received data packet to forward the first received data packet (Fig. 1, router with intelligent ports, see "generates its own routing table" recited in column 3 lines 28-33); regarding claim 19, further comprising the step of transmitting the first received data packet from the first Layer 2 module to a first one of R route processing modules (Fig. 4, intelligent router port 103, see "routing data forwarded back to external interface step 425" recited in column 8 lines 23-30), through the switch fabric (Fig. 1, a router 100, see "switch fabric 102 connected to router" recited in column 2 lines 41-44) and if the Layer 3 routing engine determines that a forwarding table associated with the Layer 3 routing engine does not contain the Layer 3 address associated with the first received data packet (Fig. 4, intelligent router port 103, see "when address does not exist step 420" recited in column 8 lines 9-15); regarding claim 20, wherein the switch fabric transmits the first received data packet to the first route processing module (Fig. 1, a router 100, see "switch fabric 102" recited in column 3 lines 5-10) and by selecting the first route processing module using a load distribution algorithm (Fig. 1, a router 100, see "switch fabric 102 maintains distributed control"

recited in column 3 lines 16-22); regarding claim 22, wherein the Layer 2 frames are Ethernet frames (Fig. 3, intelligent routing port 103, see "data link layer processing" recited in column 7 lines 48-50); regarding claim 23, wherein the Layer 3 data packets are Internet protocol (IP) data packets (Fig. 1, a router 100, see "internet protocol (IP) packet address" recited in column 3 lines 55-65) and regarding claim 24, wherein the switch fabric is a Layer 2 switch (Fig. 1, a router 100, see "layer-2 switch fabric 102" recited in column 4 lines 11-28).

Civanlar et al. does not disclose the following features: regarding claim 1, each the N Layer 2 modules capable of receiving data packets in Layer 2 frames and forwarding the received data packets using Layer 2 addresses associated with the Layer 2 frames; regarding claim 9, each of the N Layer 2 modules capable of receiving data packets in Layer 2 frames and forwarding the received data packets using Layer 2 addresses associated with the Layer 2 frames and regarding claim 17, a method of routing data packets in the router comprising the steps receiving a first data packet in a first Layer 2 module determining if the first Layer 2 module recognizes a Layer 2 address associated with the first received data packet (Fig. 2, router 120 receiving and processing packets, see "receiving and forwarding of Ethernet frames" recited in paragraph 0042 lines 1-10) wherein each of the N Layer 2 modules receives data packets in Layer 2 frames and forwards the received data packets using Layer 2 addresses associated with the Layer 2 frames.

Kumar et al. discloses a communication system for a parser receiving input data according to a packet format and generating data units of interest on prespecified paths

with the following features: regarding claim 1, each N Layer 2 modules capable of receiving data packets in Layer 2 frames and forwarding the received data packets using Layer 2 addresses associated with the Layer 2 frames (Fig. 2, router 120 receiving and processing packets, see "receiving and forwarding of Ethernet frames" recited in paragraph 0042 lines 1-10); regarding claim 9, each of the N Layer 2 modules capable of receiving data packets in Layer 2 frames and forwarding the received data packets using Layer 2 addresses associated with the Layer 2 frames (Fig. 2, router 120 receiving and processing packets, see "receiving and forwarding of Ethernet frames" recited in paragraph 0042 lines 1-10) and regarding claim 17, wherein each of the N Layer 2 modules receives data packets in Layer 2 frames and forwards the received data packets using Layer 2 addresses associated with the Layer 2 frames (Fig. 2, router 120 receiving and processing packets, see "receiving and forwarding of Ethernet frames" recited in paragraph 0042 lines 1-10).

It would have been obvious to one of ordinary skill in the art at the time of invention was to modify the system of Civanlar et al. by using the features, as taught by Kumar et al. in order to use of the same means for N Layer 2 modules of receiving data packets in frames and forwarding them using Layer 2 addresses associated with the Layer 2 frames. The motivation for using N Layer 2 lookup modules with the parser is to receive layer 2 information of Ethernet destination address and send it to forwarding engine for switch fabric in a cost effective manner.

5. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Civanlar et al. (USP 6,078,963) in view of Kumar et al. (US 2004/0156371 A1) as applied to claims 1, 9 and 17 above, and further in view of Wybenga et al. (US 2005/0053080 A1).

Civanlar et al. and Kumar et al. described the claimed limitations as discussed in paragraph 4 above. Civanlar et al. and Kumar et al. do not disclose the following features: regarding claim 5, wherein said load distribution algorithm is a round-robin algorithm (Fig. 2, routing of data packet between IOP modules and switch fabric, see "IOP sends data packets via switch fabrics using round-robin algorithm" recited in paragraph 0027 lines 1-15); regarding claim 13, wherein said load distribution algorithm is a round-robin algorithm (Fig. 2, routing of data packet between IOP modules and switch fabric, see "IOP sends data packets via switch fabrics using round-robin algorithm" recited in paragraph 0027 lines 1-15) and regarding claim 21, wherein the load distribution algorithm is a round-robin algorithm (Fig. 2, routing of data packet between IOP modules and switch fabric, see "IOP sends data packets via switch fabrics using round-robin algorithm" recited in paragraph 0027 lines 1-15).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Civanlar et al. with Kumar et al. by using the features, as taught by Wybenga et al. in order to provide the round-robin algorithm. The motivation of using round-robin algorithm is to accomplish the requirement of redundancy in a cost effective manner.

Response to Arguments

6. Applicant's arguments with respect to claims 1, 3-9, 11-17 and 19-24 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Syed Bokhari whose telephone number is (571) 270-3115. The examiner can normally be reached on Monday through Friday 8:00-17:00 Hrs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kwang B. Yao can be reached on (571) 272-3182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KWANG BIN YAO
SUPERVISORY PATENT EXAMINER